



JANUARY 1925

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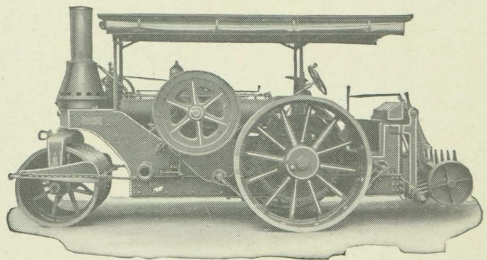
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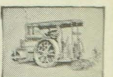
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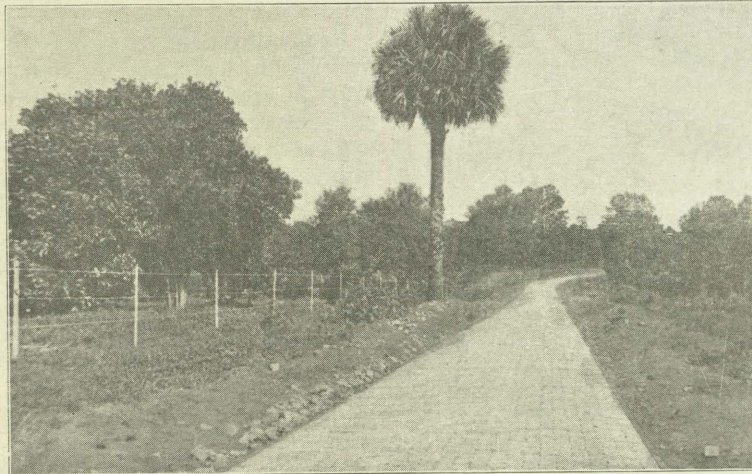
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FLORIDA HIGHWAYS



Vol. II

JANUARY, 1925

No. 2

John Liska, of Wisconsin Rapids, Wisconsin, is Winner of Firestone Scholarship in Fifth Good Roads Essay Contest

John Liska, high school youth of Wisconsin Rapids, Wisconsin, is announced as winner of the H. S. Firestone Four Years University Scholarship for 1924, his essay having been chosen as the best of those submitted in the fifth good roads essay contest.

Liska's essay represented Wisconsin in the national competition, in which one essay was entered from each state and territory. It had previously been selected as the best of those from his State by a committee named by the Extension Division of the University of Wisconsin. More than 200,000 high school students throughout the United States and territorial possessions sought the honor which fell to him. The contest was conducted by the Highway Education Board, of which Dr. J. J. Tigert, U. S. Commissioner of Education, is chairman.

National judges who reviewed the State essays were James J. Davis, Secretary of Labor; Dr. W. O. Thompson, president of Ohio State University, and Merle Crowell, editor of the American Magazine. Liska is the fifth high school student to win this honor in as many years. Honorable mention was given to the essays by Richard Arimizu, Hilo, Hawaii; H. Harold Kelley, 707 West Euclid Avenue,

Pittsburg, Kansas; and Viola Greene, Willimantic, Connecticut, R. F. D. No. 1.

The prize winning essay follows:

THE RELATION OF IMPROVED HIGHWAYS TO HOME LIFE

By John Liska.

Isolation is the primary cause of the ignorance so evident in rural communities. Poor roads, more than anything else, have forced the farm home into a demoralizing isolation. The improvement of highways, making the consolidated school and social center possible, is injecting new life into homes formerly hopelessly isolated. Home life is broadened and enriched. Boys are willing to stay "down on the farm." Girls cease to envy their city cousins and to leave home for "the bright lights."

Just a few minutes of travel on a particular road leading out of the city of Wisconsin Rapids, will convince the most doubtful skeptic of the value of good roads and their influence upon home life. About two miles from the city this road branches.

(Continued on Page Four)



Florida Highways

Published Monthly

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B. A. Meginniss, Attorney for the Department,
Editor and Business Manager

Volume II

January, 1925

Number 2



OUR COVER DESIGN

From the moment of launching FLORIDA HIGHWAYS, it has been our ambition to make it not only interesting, valuable and readable but physically attractive as well, and in connection with this aspiration there has been always in the back of our mind, the hope that we might some day present the most beautiful cover design ever seen on a highway magazine. We believe that this month we have reached the high ideal toward which we strove.

The cover on this issue does not portray the excellence of the construction work which has been and is being done by the Department; on the contrary, the road shown is one which in engineering terms would be classed as "unimproved." But the scenic beauty of the stretch of roadway shown with its majestic trees and beautiful shrubs is typical of the beauty and grandeur of Florida, and is just one instance of what may be found in every county of the State.

We are proud to present this cover this month, because it is our purpose to issue and donate 500 extra copies of this issue for distribution at the Florida Exhibition to be held this winter in Madison Square Garden, New York. We have not communicated this offer to those in charge of the exhibit, but we believe it will be accepted, none the less.

For the photograph, we are indebted to Hon. Fred W. Marsh of Pensacola, road enthusiast of many years standing; the engraving and art work is from the Wrigley Engraving Company at Jacksonville, while the press work was done by the Appleyard Printery at Tallahassee—an all-State product.

And, least we forget, the whole is issued without one cent of expense to the State or the taxpayers.

Thy Brother's Keeper (A Safety Editorial)

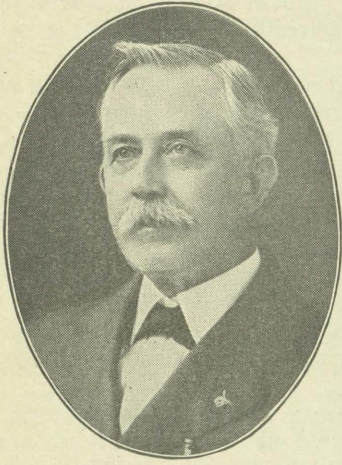
It is a far cry from the barbarous times when the physical imperfect child was put to death. This savage system of eugenics finds little favor today, when the value of human lives—even if physically imperfect—is far better understood.

Our modern social order knows that a cripple, like the late Charles P. Steinmetz, may be of extreme importance in the world's scheme of affairs. Yet the world still holds fast to the idea of a "sound mind in a sound body," and modern social and scientific effort is directed both toward the preservation of life and limb.

That is the basis of the "safety" movement in America, where the danger of accident is far greater than elsewhere because of the nation's prosperity and enterprise, with the consequent vogue of the motor-driven vehicle. It is this, at least in part, which has led to the formation of the National Safety Council, a co-operative organization designed to promote the safety idea.

(Continued on Page Twenty-one)

Chairman's Column



MEETING OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS AT SAN FRANCISCO

The American Association of State Highway Officials held its 1924 convention in the City of San Francisco, California, November 17-19. It was the good fortune of the Chairman of this Department, accompanied by Mr. and Mrs. Green and our Chief Engineer, to attend this gathering and to take part in its work. The annual conventions of this association are attended by the highway officials and engineers from the Bureau of Public Roads and from nearly every State in the Union, and this year we had a delegate from Hawaii. I think it can truthfully be said that a convention of this association is a gathering of the greatest highway engineers and road builders in the world.

Our convention this year was, of course, western in its flavor. The West was out in full force and some considerable part of our time was spent in considering problems of road building in the West, and no little was said about building the highways which lead from the Atlantic to the Pacific. That was as it should be. The 1923 convention was held in New Orleans, and there we heard about road problems of that section and about how to get trunk highways leading from the Lakes to the Gulf. It is to be understood, of course, that the Association is national in its scope and interests, but it is natural that problems affecting the locality of the particular meeting place should be stressed. Some time (next year, we hope) the Association will meet in Florida, and then our problems will come prominently to the front and the need of trunk lines leading south along the Atlantic seaboard may be stressed.

Being from the South and of the South, we were of course accustomed to hospitality and entertainment, but I think our party were a little dazed at what might be termed the largeness of the western kind. Luncheons, banquets, trips throughout the city, a shopping tour for the ladies. Nobody walks more than a block in California. Everyone seems to have an automobile. Besides the scheduled trips, if you wanted a ride to any point, all you had to do

was to mention the fact, and a car and driver were at your command on short order. They showed us the roads about San Francisco, and we got a chance to see something of highway building through the mountains. This was on the skyline boulevard being built south from San Francisco a distance of about 35 miles to a point where it joins the Pacific highway. The grade work on this road, together with a light gravel surfacing, is costing about forty thousand dollars per mile.

At the close of the convention we were given a motor ride over the Pacific highway from San Francisco to Los Angeles, a distance of about four hundred and fifty miles. On this trip we saw something of the concrete highway that has made California famous. Through valleys and fruit orchards, climbing the hills and clinging to the side of the mountains, miles of it in sight of the ocean, through villages and towns on and on it goes without a break, furnishing an example of what is so badly needed in Florida—completed trunk line highways.

We went to California over the Southern Pacific, going through Louisiana, Texas and Southern California. We returned by the Union Pacific and Denver and Rio Grande, passing through Utah, Colorado and Missouri. We stopped at various places, and at each place we inspected roads and enquired about them and the cost of construction.

We came home with two thoughts impressed upon us. First, that, giving to California and the great West all credit for all they have as to natural resources, Florida with its unrivaled climate, its diversity of soil, its varied forest growth, its wealth of water frontage on coast line, bays, rivers and lakes, stands alone and unapproachable among the States; second, that our State today is having built more miles of good roads for the money spent than any section through which we passed on this trip.

GOOD ROADS ARE WORTH THEIR COST

The highway is not simply a road. It is not simply a surface. It is the assurance of the civilizing influence of better communication between sections.

It is the silent, but persistent, factor for the reduction of living cost.

It is the humble, but powerful foe of ignorance for the reason that it makes easily accessible our splendid system of public schools to the people in the rural districts.

It is the safeguard of our food supply. It is a guarantee to the public against the prostrating influence of industrial upheaval and interruption to distribution therefrom.

It is the popular open-air theatre of enjoyment of the family.

It is the connecting link between the home and the factory.

It is the call to the open air; the great physician who makes no charge for his services.

The people who are opposed to good roads oppose them for the same reason that some people oppose our great public school system; they are not informed.—North Carolina Highway Bulletin.

JOHN LISKA WINS PRIZE

(Continued from Page 1)

One branch is called "the left road;" the other "the right road." The left road is almost always in a deplorable condition; the right road is hard surfaced. The homes on the left road are dilapidated, the front yards scarcely recognizable among the tangle of broken machinery, old wire, and various other objects placed "out of the way." The land has been cropped until it is impossible for even quack grass to flourish. The stock, descendants of some of Grand-dad's scrubs, is now so degenerated that scarcely any characteristics of a high-producing, profitable animal are evident.

Can you expect the boy or girl to remain "down on the farm" under these conditions? Not one boy or girl living on this road has any education above the eighth grade, and very many have not even completed the eighth grade. These young people, many of them lying about their ages, have had to seek a "job" at the store, mill or factory, instead of completing their educations. Can home life be pleasant and happy where these conditions exist?

The road to the right leads through land slightly more fertile, but more fertile only as a result of better farm management. No farm home on this road, for a distance of twenty miles, is without at least one modern convenience. Several farms are equipped with every modern convenience, both in and out of the home.

The aesthetic influence a good road exerts is very evident. Often it stimulates latent self-respect into practical expression. Those people are continually adding some improvement in an honest attempt to beautify their home surroundings. Through diversi-

fication and rotation of crops they have succeeded in bringing their land to a high degree of fertility, resulting in more stable income each year. They are sending their children to high schools, agricultural schools and universities. A better education is teaching these children to realize the value of a true home.

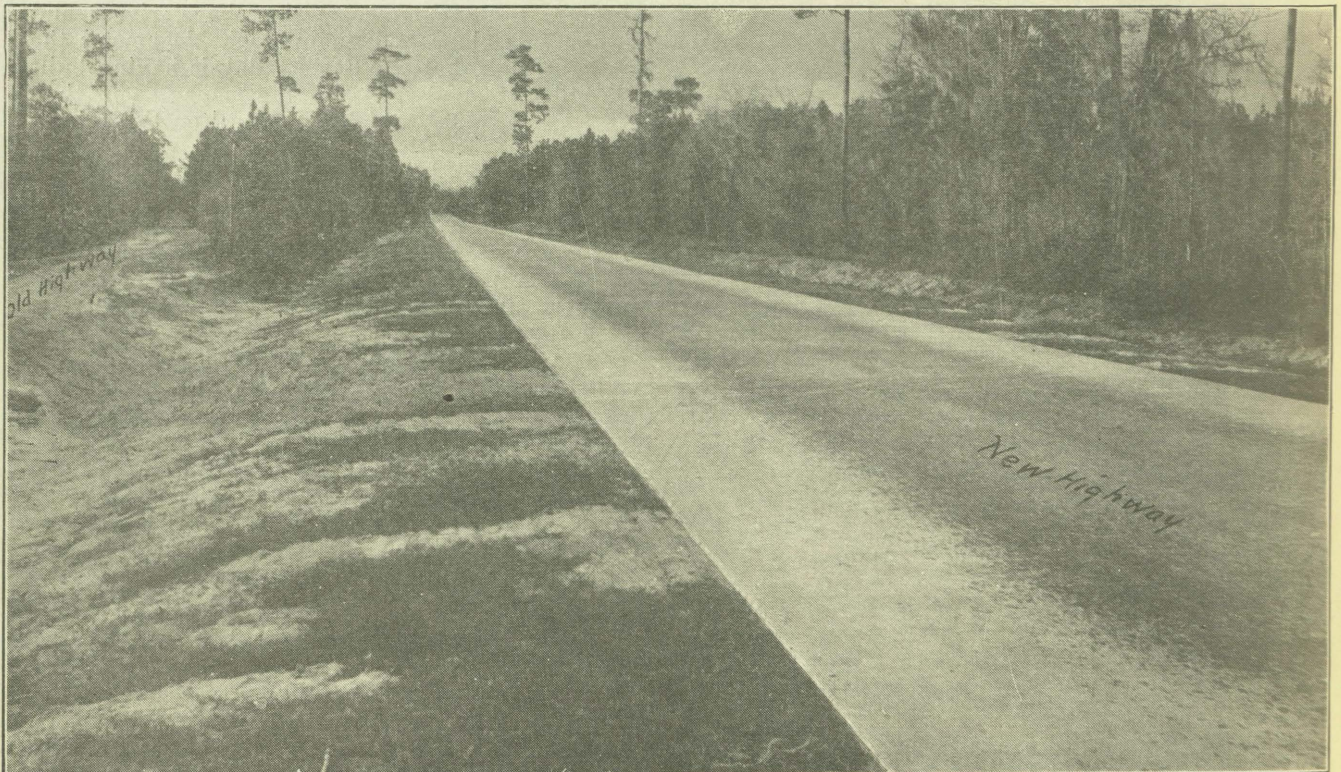
Before the right road was improved, conditions were alike on both branches. The improved highway alone made diversified farming profitable, made a better education possible and better homes a reality.

On the left road the average farmer has, in a large measure, lost his self-respect and has allowed his home to fall below the standard and has failed to keep in stride with the times. He is considered inferior to city people. Farmers, such as those on the right road, are again placing the farm home upon the pinnacle where it should rest, "The True Home of Man."

How necessary to that home is a good road! What a relief it must have been to those simple folk in Whittier's "Snow Bound" to have the road opened and the floundering carrier bring the village paper to the door!

The left road may be compared to the snow-bound road, impeding progress, forcing isolation. The right road may be compared to the opened road, offering new opportunities, new possibilities and new happiness.

The right road is, in the true sense of the word, the "right road." We must build more of them. Until this is accomplished, home life in isolated sections will, in the future, simply exist; but when all roads are right roads, these same communities, these same homes, will live.



An Example of Concrete Highway Construction in Florida. On the left is shown a stretch of the road which has been replaced.

Building a Road to My Old Kentucky Home

W. O. SAUNDERS, in Collier's, The National Weekly (Reprinted by Permission)

A tax-payin' farmer in the State of Kaintuck
Has a fertile little farm but darn poor luck;
He has good teams and he has good crops,
But he can't get to town before the market drops.

"Tucky in the mud—hee, hee, hee!
Can't sell a spud—d—d—d—!
Taxes up and the roads run down,
Money there a-waitin', but he can't reach town.

A tall, sinewy mountaineer strolled into his favorite bank in Richmond, Ky. He hadn't been to town in six months and part of his business on this momentous occasion would be to shake hands with the banker.

But the banker didn't shake.

Neither did the doctor, nor the lawyer, whom the mountain man met on the street a few minutes later. The ancient and honorable custom of handshaking has suffered a setback in parts of Old Kentucky. But the mountain man understood. Thousands of hands that never wielded anything heavier than a fountain pen or a corkscrew before have labored with sledge hammers, shovels, and picks on Kentucky mountain pikes this year and blistered unspeakably.

But with a song in their hearts and on their lips, bankers, merchants, doctors, lawyers, college professors—and their wives and daughters; and plain mountaineers and their wives and daughters (more than two hundred thousand people from Asheville, N. C., to Lexington, Ky.) have labored in what is probably the greatest cooperative long-distance highway-building project ever undertaken in America. And it all began with dinner clubs, motor clubs, and chambers of commerce singing a song.

Sold on the idea of digging themselves out of the mud in Old Kentucky, thousands have labored this year to make passable a great, short, scenic highway from the populous Middle West to Florida via North Carolina's famed Land of the Sky. And to the tune of "Turkey in the Straw" thousands have sung the words that head this article.

Winter comes along and it's time for school,
And the poor little kids find a wadin' pool.
The farmer's wife reads the "catalogue,"
'Cause she can't get to town through the beastly bog.

"Tucky in the mud—haw, haw, haw!
Flounder in the flood—raw, raw, raw!
Taxes due and the roads all gone,
Goes to bed at seven and he's up at dawn.

They might have been waiting yet for state or federal aid, but they sang their way instead into a scheme to build a national highway with picks and pennies.

The Women Swung Picks Too

Gasoline filling stations from Cumberland Gap to the Ohio River have put a cent a gallon on the selling price of gasoline and pooled the pennies in a trusteeship for bridging hitherto impassable gaps in

the Dixie Route A Highway through Kentucky. Whole towns have suspended all business and closed up tight, the populace going forth to haul and break rocks on mountain roads; the town banker, doctor, and all the rest of them working side by side with day laborer and rustic; and the women going along to serve the workers with food and drink. In many cases the women have felt that merely serving lunches and ice water to the toiling, sweating males wasn't enough, and the women have handled picks and broken rocks with the men. It sounds almost unbelievable, but it's true.

On May 20, 1924, eighty-seven business and professional men of Mt. Vernon, Ky., reinforced by two hundred and fifty leading citizens of the neighboring towns of Berea, Richmond, Paris, and Lexington, laid bedrock on a mile of mountain road in Rockcastle County.

That's just one instance of how it has been done. And they sang:

Mortgage on the farm and he buys a little Ford,
Trustin' to luck for his room and board;
The dern thing starts and he thinks he's "jake,"
Till he finds himself a-sittin' in a lava lake.

"Tucky in the mud—ho, ho, ho!
Swallerin' yer cud—oh, oh, oh!
Farm's tied up and the sheriff's here,
And they think because he's kickin'
That the farmer's queer.

The song was carried to dinner clubs and motor clubs in Lexington, Cincinnati, Detroit, and Chicago. Lexington raised a substantial sum to aid the work. Detroit sent down \$9,200. Cincinnati, in a movement led by Monte J. Goble of the Fifth Third National Bank pledged \$25,000. Asheville, N. C., through the Asheville Western Carolina Motor Club, contributed \$25,000. As this article was being written Chicagoans were chipping in to the tune of more thousands. And the gasoline filling stations along the way were collecting a cent a gallon on every gallon of gas they sell for Dixie Route A. I heard a bewhiskered, hard-handed hill farmer who drove up in a flivver at a filling station in Berea say: "I wish they'd make it five cents a gallon; I for one want roads."

It is no fine concrete or asphalt boulevard they've built, but a substantial, passable highway that any motorist can go over on his own power any day in the year. And that's a good road as good roads go for any considerable tour. It's a road that will save tourists from the great Middle West 600 to 900 miles each way on the trip to Florida. And the center of wealth, population, and the automobile industry, as well as the automobile-owning population lies in the triangle from Cincinnati to Detroit and Cleveland on the one hand, and from Cincinnati to Indianapolis and Chicago on the other hand.

An investigation by the Asheville Western Carolina Motor Club developed the information that 57,-

000 cars rolled into the State of Florida in 1918, and 220,000 in 1922. Estimates are that the number will exceed 300,000 this year. And the same estimates show that 65 per cent of these cars came out of the Middle West and States immediately adjoining it. Warned by signs, "Detour Kentucky," most of these tourists have made the trip via the Washington, D. C., gateway. It is 625 miles from Cincinnati to Washington; from Washington to Asheville is another 610 miles. By the new Dixie Highway Route A it is 428 miles from Cincinnati to Asheville. Figure out the saving for yourself.

The saving in mileage isn't all. Figures show that touring cars carry an average of four persons. Other figures show they average about 125 miles of travel a day and that the cost of their traveling will average about 20 cents per car a mile. Take them big and little, rich and poor, flivvers and limousines, automobile tourists spend an average of \$7.50 a day per person as they roll along. Some do it for a little less by rigid economies; many spend much more.

The shorter route to the South means millions saved for tourists from the great Middle West. What's more, it makes the Middle West accessible to millions of automobile owners from the Southeastern States and it puts historic Old Kentucky on the tourists' maps, going and coming. That's what aroused enthusiasm in Kentucky and put good-roads songs in the hearts of the Blue Grass folk. Kentucky, rich in history and traditions, rich in natural resources and human interest, rich too in scenic beauty, has a big show to put on for the tourist, whether said tourist is looking for game cocks, hounds, and fast horses, or caves, gorges, trout streams, and mountain fastnesses. And the mouths of Kentuckians all along Dixie Highway Route A are already watering copiously in anticipation of the revenue to be derived shortly from an annual flow of 70,000 or more tourist cars across their State; for every tourist spends \$7.50 a day and it takes two days to cross the State.

Emerson, Fra Elbertus, or somebody before either

of them, said that any enterprise is but the lengthened shadow of some man. This Dixie Highway Route A, with all the enthusiasm behind it, is the result of the imagination and the salesmanship ability of two men who had a common idea.

In the fall of 1922 the two men casually met at Hot Springs, N. C. One of them was N. Buckner, for twelve years secretary of the Asheville, N. C., Chamber of Commerce and secretary-manager of the Asheville Western Carolina Motor Club. The other was C. O'Connor, an engineer who had for several years been associated with the Southeastern Division of the A. A. A. The pair took shop and compared notes. Each found the other a delightful "nut" on the big idea of the short scenic route from the Ohio River through Kentucky and Tennessee to western Carolina and points in Florida. And there they hatched the idea of selling the project to everybody interested.

It was all a matter of salesmanship; but with boundless enthusiasm, faith in the big idea, and the personalities to inspire confidence, the two of them got busy. Both are Kiwanians and they started out to enlist the support and enthusiasm of Kiwanis Clubs from the Tennessee line to Cincinnati. Kiwanians like to sing and they sang themselves hoarse on "Tucky in the Mud." Everybody else fell into line and Dixie Highway Route A has come along under the management of N. Buckner and the supervising engineering of C. O'Connor.

They also sang lustily in dinner clubs along the Dixie Highway a rousing parody on "Old Black Joe."

Gone are the days when "any road" would do;
Gone are the days when oxen pulled 'em through;
Gone are days when devilish Fords were few;
I hear those voices loudly calling, "Build Good Roads!"

This Dixie Highway Route A project shows how enthusiastic cooperation in any great civic or social enterprise in America is possible if you put the right sort of salesmanship behind it—and perhaps get the dinner clubs singing for it.

National Association of Highway Officials Adopts Resolutions Relative to Further Federal Aid, Colton Bill and National Parks Roads Appropriations

During the convention of the American Association of State Highway Officials, held at San Francisco, November 17-20, several resolutions were adopted relating to federal aid matters. The association went on record favoring a continuance of federal aid under the pending Dowell Bill, which provides \$75,000,000 for 1925 and a like amount for 1926, and also gave its endorsement to the Colton Bill, which is also now pending in Congress, and which provides for 100 per cent federal aid in the western public land states under certain conditions, as well as removing the limitation per mile of cost which has served to handicap the construction of federal aid roads in the thickly populated eastern sections. In addition the association discussed at length the pro-

position of improving the highways adjacent to and within the various National Parks, and went on record urging Congress to immediately appropriate two and one-half millions for each of the years 1925-1926 and 1927 to carry out the construction program as outlined by the National Park Service under the Act passed at the last session of congress.

It was the opinion of the representatives of the States present at the convention, that the present system of federal aid highway construction is working out to the satisfaction of all States and that the same method should be continued in the future, rather than to attempt any change to a national highway commission plan, such as has been advocated during the past. It is doubtful, therefore,

whether the national highway commission plan will be again brought up during a session of Congress for some time to come, as the public seems generally well pleased with the present federal aid plan, under which the actual work is carried on directly by the States.

The resolutions adopted by the association relating to these various subjects were as follows:

Resolution on Federal Aid

Whereas, We note with much satisfaction that the federal administration and the Congress have unqualifiedly given approval of the general policy of federal aid in highway construction, and that the political parties have also gone on record for a continuation of this policy; therefore, be it

Resolved, That the American Association of State Highway Officials in Tenth Annual Convention Assembled urge the Congress to speedily pass the authorization bill, which has already passed the House of Congress, known as H. R. 4971, in order that proposed federal aid projects for the coming construction year may be expedited.

Resolution on Colton Bill

Whereas, There is now pending in Congress a bill known as the Colton Bill, being H. B. No. 6133; and

Whereas, This bill is of great benefit to all the States of this country in that it permits the Federal Government to participate in the entire cost of the construction of highways which must be built to a better standard than was at first contemplated when federal aid was initiated for highway construction in the respective States; and

Whereas, The passage of this bill will be of great benefit to many of the Western States in permitting them to construct trans-continental highways through vast stretches of desert and sparsely settled sections of the public domain.

Now, therefore, be it resolved, That it is the desire of this association in convention assembled that the Colton Bill, H. B. No. 6133, be enacted into a law of the land.

Resolution on National Parks Roads Appropriations

Whereas, The recent development of the State and Forest Highways as stimulated and perfected by federal appropriations, most wisely made by a far-seeing Congress; and

Whereas, There have not been made any substantial federal appropriations for the improvement of the existing or the construction of additional roads in our National Parks; and

Whereas, The few existing roads in our National Parks are entirely inadequate and unsafe to meet the needs of the constantly increasing National Park travel; and

Whereas, The National Parks stimulate interstate and inter-national travel, and serve as an extremely necessary part in the recreational, educational and economical life of our people, and tend to make them more patriotic citizens; and

Whereas, Congress has finally recognized the wisdom and necessity of developing and making usable to the citizens of this nation and of the world, our most wonderful national Parks, containing as they do the greatest, most beautiful and most wonderful natural features of the world, and Congress has signified their desire that such road improvement should be immediately undertaken in passing by

unanimous vote by both the House of Representatives and the Senate the Bill, H. R. No. 3682, 68th Congress, 1st Session, which authorizes the appropriation of \$2,500,000.00 for each of the fiscal years of 1925-1926 and 1927, notwithstanding which appropriation to put such work into effect has not yet been made.

Now, therefore, be it resolved, by the American Association of State Highway Officials here assembled at San Francisco, at their tenth annual meeting, That Congress should immediately make the appropriations authorized by the said bill, H. R. No. 3682, in order that the roads of the National Parks shall be extended and improved as provided for therein, and as necessary to bring them up to the standards of the approach roads, leading to the parks, which roads are being—or have been—improved by the States, counties and National Forest Service; and that such other appropriations as may be necessary to further improve or extend the roads and to properly develop and improve other phases of our National Park development should be made by Congress. Be it further

Resolved, That a copy of these resolutions shall be furnished the President of the United States, the Secretary of the Interior, the Director of the U. S. Budget, the Chairman of the Senate Appropriation Committee, the Chairman of the House of Representatives Appropriation Committee, the Chairman of the Interior Department Committee on Appropriations, and to the representatives of the press.—The Nevada Highway News.

THE FLIVVER HOBO

He owns a dented tin machine,
A roll of ragged bedding,
Perhaps sufficient gasoline
To last to where he's heading;
Some pots and pans, a dirty tent,
Some rusty spades and axes—
He needs no home, he pays no rent,
He never heard of taxes!
The Flivver Hobo is a tramp
I've met in hordes this summer,
At many a town's Free Auto Camp—
A most accomplished bumner.
Gone is the ancient hobo's life
And solitary habits—
The new one has his kids and wife,
And often raises rabbits!
He winters in a Southern clime
Near various watering places;
He spends the sunny summer time
In the Great Open Spaces.
He takes a few odd jobs to pass
The time, when unmolested,
And earns enough to buy the gas
To move on when requested.
The future isn't hard to read—
One generation's distance
Sees all his children grown to lead
A similar existence.
Like locusts they will multiply,
And roll up like a river,
Till all the land is eaten by
The Hobo with the Flivver!
—Ted Robinson in Cleveland Plain Dealer.



An Excellent Example of Sand-Clay Highway Construction.

The Most Mileage for the Money

Nowadays the value of pretty nearly everything in the automobile field is measured in terms of mileage. The relative merits of various motors, tires and accessories are extolled on the basis of the number of miles of service they will give per dollar of cost.

No one questions the soundness of such an argument. It is just plain common sense to get as much as possible for your money, yet when that simple logic is applied to road building, people seem to lose sight of this economic principle entirely.

Public Confused About Roads

The difficulty in determining what kind of roads will be productive of the most benefit, lies in the fact that much confusing information has been broadcast regarding the many different types of construction.

In consequence, we often find the public voting large sums of money for limited stretches of first class highways, when the funds could be more efficiently employed in building more miles of less costly but sufficient serviceable roads for the requirements of the traffic. For the average vehicular travel, it is manifest that one hundred miles of road costing \$15,000 a mile would be better than fifty miles of road costing \$30,000 a mile, because more than twice the community area would be provided with road service.

Of course it is assumed that the \$15,000-a-mile road would necessitate a greater outlay for maintenance, but that is largely offset by the interest charges on the investment, which amount to only

one-half the interest charges on the \$30,000-a-mile road.

Measuring the True Value of Roads

Even when a moderately serviceable highway actually costs considerably more for maintenance than a first class highway, it would be fully justified by the vastly greater mileage which could be constructed by virtue of its lower original cost. It is a fallacy to conclude from the results of skillfully juggled figures that the savings in gasoline, made by motor vehicles on hard surfaced highways, eliminate good gravel roads from consideration altogether.

That conclusion ignores the factor of mileage. With only a definite fund available, it is more logical to provide all the people of a given community with reasonably good road service than to let the minority profit by having a few fine highways, while the majority suffers from the disadvantage of impassable roads.

Using a familiar illustration, if a man has a limited sum to spend for clothing his children, it is certainly more sensible to buy a serviceable suit for each, than to put all the money into an extravagant outfit for one, and let the rest get along as best they may.

The Crying Need—Mileage

What the country needs first of all is a greatly increased mileage of serviceable highways, so that the greatest possible number of people may be bene-

(Continued on Page Twenty-Three)

Naming and Marking National Highways

At the Tenth Annual Convention of the American Association of State Highway Officials, held in San Francisco, November 17th to 20th inclusive, it developed that there is a well crystallized demand all over the Nation for a well defined system of named and uniformly marked National Highways.

The association has a standing committee on "Traffic Control and Safety" and at the convention Mr. E. W. James of the Bureau of Public Roads was its acting chairman. From the committee report submitted by Mr. James we quote the following:

"There has long been a more or less coherent expression of public opinion in favor of the designation of certain routes across our country in different directions by a single well-known name or designation, and it is recognized that the organizations which have done much to develop and crystallize such opinion have drawn wide and considerable support from almost every section of the United States. The Federal Aid Highway System, provided for in law, has been designated and approved for all of the States, and consequently conditions are such at the present time that your committee strongly feels that this Association should take a definite stand for a general designation of through routes.

"Such action will involve administrative cooperation on the part of all States and probably legislative action on the part of a number, and it is obvious, therefore, that any action to be effective and reasonably rapid must be had under the direction of some one properly equipped agency rather than under any one State.

"Accordingly your committee makes first the following recommendation:

"It is recommended that this Association request the Secretary of Agriculture, in cooperation with the several States, to undertake immediately the selection and designation of a comprehensive system of through interstate routes and to devise a comprehensive and uniform scheme for designating such routes in such a manner as to give them a con-

spicuous place among the highways of the country as roads of interstate and national significance.

"The mapping and field marking of this system will doubtless constitute the principal means through which it will become generally known to the public, and it is believed that the value of the system will be emphasized by the use of considerable uniformity in the marking devices used, and your committee accordingly makes a further recommendation.

"It is recommended that this Association go on record as favoring the adoption of a uniform method of marking the interstate roads to be designated and recommends that each State through its proper officials undertake to secure any necessary changes in marking and such changes in existing schemes for numbering or designating roads as may appear necessary; and that each State Highway Department undertake as rapidly as its program of work will permit the actual field marking of the designated routes."

What It Means

Just what the carrying out of a comprehensive Nation-wide scheme of this character means is so plain that "he who runs may read." It means that the Bureau of Public Roads in cooperation with the various highway departments of the Nation will designate through all the States, certain east and west and north and south highways and that the roads in this master system will be recognized and accepted as the best and most feasible routes to travel. It means that this system will be mapped and the interstate or transeontinental tourist will but rarely ever have use for any other road guide. It means that this system will form the base from which the ultimate great national highway system must radiate and into which we will, as a matter of course, tie all of our State and county highways.

It can be properly termed "The Master Key to the Master System." The idea is a great one. It will succeed because it is right and to oppose it or get in the way of it simply means to get run over. Come on, let's go!—The Nation's Highways.

THE HIGHWAY OF THE STARS

Ambition is life's greatest highway that points to the stars—it is lighted by the rays of hope that spring from the heart of man and paved with beads of sweat that fall from his brow. Few of us are fortunate enough to reach the heights for which we strive, but we gain all we get from the strain and sweat—and the struggle is always worth while.

For the accommodation of the masses, a good highway is probably of more importance than a railroad. This is at least true as regards passenger traffic, for a good highway paralleling a railroad, carries from five to ten times as many people as the railroad.

Give us good roads or give us social isolation, economic paralysis, and intellectual stagnation.

Twelve thousand consolidated schools in the United States testify to the educational value of the highway.

Personal liberty does not mean that you can appropriate the highway irrespective of the rights of the coming vehicle. Your personal liberty ends where the other half of the highway begins.—Texas Highway Bulletin.

Tourist—"I'm almost certain I must have run across your face sometime or other!"

Sour Waiter—"No, sir! it's always been like this!"

"The character and civilization of any community can be properly judged by the class of roads it has."—Gibbon.

The Good Roads Movement

The growth of "the good roads movement" in the United States and Canada since its organized inception in 1880, and with the great stimulus it received in the periods immediately following the advent of the automobile and the appearance of the motor truck, has been so rapid, so extensive and so effective that highway construction today constitutes one of the greatest, if not the greatest, problem in American economic life.

There are now 1,702 organized agencies actively and directly pleading the cause of good roads. The agitation, to date, has brought about the construction of 310,000 miles of surfaced highways—raising the highway mileage of the United States to 2,478,552, and that of Canada to 255,000.

The automobile industry, fourth largest in the country, with 368 manufacturing plants, capitalized at \$1,204,378,642, employing 325,000 workmen, having an annual output of 2,205,197 passenger cars and trucks valued at \$3,594,814,620, and supplemented as it is by 1910 firms producing auto parts valued at \$300,000,000 a year, together with 1,000 firms manufacturing annually 35,000,000 tires valued at \$1,000,000,000, is absolutely dependent upon highway improvement for its stability and upon increased road mileage for greater expansion. In addition, 33,000 distributors of automobiles are involved, as well as 45,800 dealers in automobile acces-

sories and 45,000 dealers in tires. So great, too, has the road-building industry become, in consequence of the demand for improved roads, that 7,500 contracting firms are now engaged in actual construction work. The roads are now traversed by 9,211,295 licensed cars and trucks, of which 3,000,000 are used on the farms.

Prior to 1880, when Amos G. Batchelder, late chairman of the executive board of the American Automobile Association at Washington, with H. S. Earle of Detroit and other pioneer advocates, organized the League of American Wheelmen, and began a systematic campaign, a good roads enthusiast was looked upon with undisguised curiosity or amusement as something of a "nut"—a loquacious, but no doubt well-meaning person, who might be seen, but not heard. Usually he was promptly "sat down upon" but the lugubrious taxpayer.

Opposition gradually melted away, however, as the campaign became more fully organized and extended. Since 1880 more than \$3,000,000,000 has been spent for highway improvement in the United States and Canada. More than \$1,300,000,000 is now available, and \$1,500,000,000 additional will be necessary to carry out projects under contemplation. And yet, with all this, only a beginning has been made. Billions more must be expended before the country has anything like a highway system adequate to the traffic needs.—Kentucky Road Builder.

The Grandmother of Good Roads

Wherever women have taken an active part in public affairs, they have invariably entered into their tasks with an energy and zeal that brings credit upon themselves and their work. There is a striking instance of this fact in the person of Mrs. Anna Norris Kendall, a noble old lady of seventy-nine years, who is road commissioner of Washington County, Alabama. She has come to be called the "Grandmother of Good Roads," because she has devoted her whole life to that worthy cause. As related in the American Magazine, she has made good roads her life hobby, and realized the need of them ever since she was a tiny tot on her father's farm in Illinois, and got stuck in the mud while crossing the prairie trail which led from the house to the barn.

When she went to Alabama ten years ago, she saw at once that the lack of good roads was holding the community back from prosperity. She immediately directed her efforts to selling the idea of good roads to the people with such success that they elected her road commissioner. Mrs. Kendall not only appreciates what good roads mean to a community, but she knows how to build them. She thoroughly understands about sub-surface ditches to take care of the seepage and ground water. She knows, too,

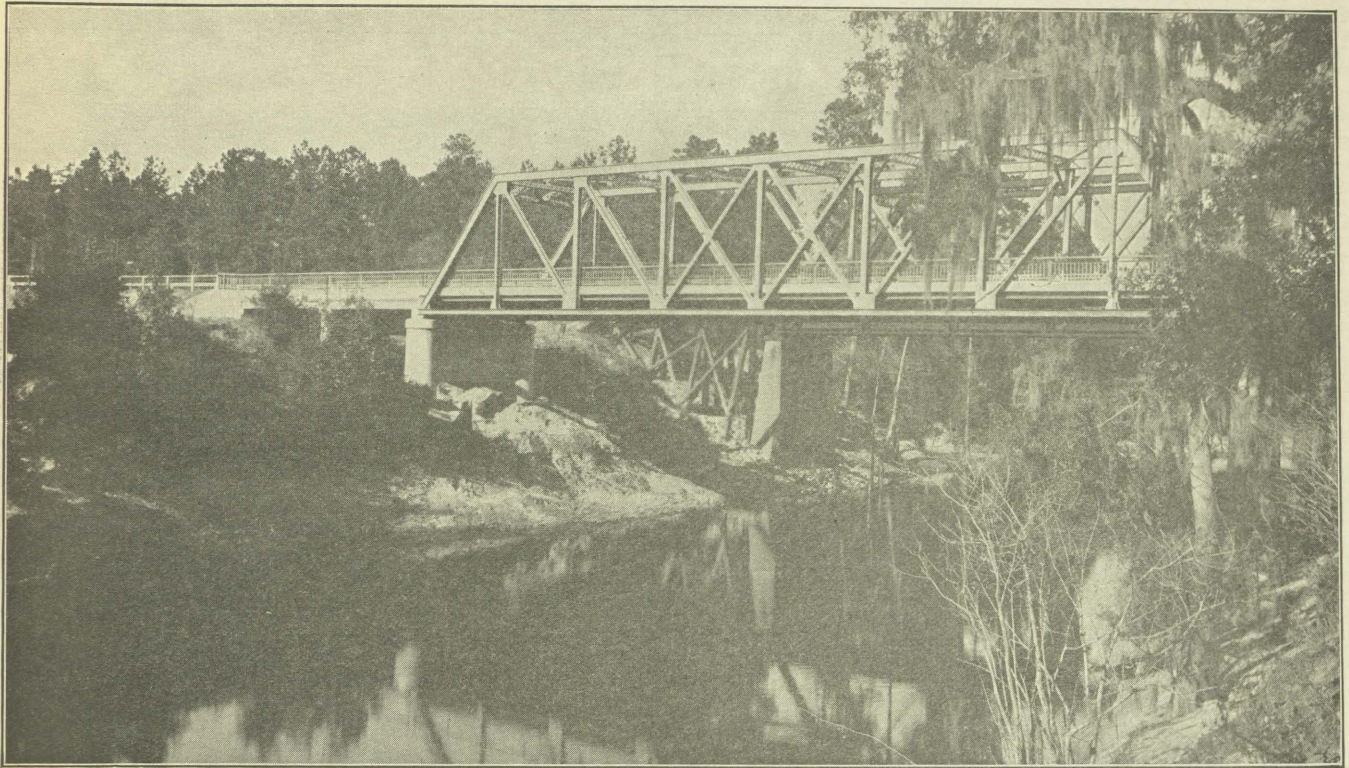
the importance of cross drains and the proper methods of installing culverts.

"Be sure to dig those side ditches deep enough," she tells the workmen. "Unless they parallel the road and are deep enough to hold the water which runs off in heavy rains, we shall be forever mired in the springtime."

Residents of Washington County, who had become resigned to being mired in the sticky Alabama soil, love to watch her standing bareheaded by the side of the road, directing the driver and his team of mules, with the confidence and skill of a veteran highway engineer.

Today, Mrs. Kendall's favorite project is the Mississippi Valley Highway, already under construction, and she is the honorary member of the commission. She is enthusiastic about the idea of one continuous highway from Duluth to the Gulf of Mexico, a main artery through the fertile valley that feeds three-fourths of the population of the United States.

And so this "Grandmother of Good Roads" is working away quite as zealously and efficiently as though her life were only beginning, cognizant that good roads are the arteries of the country and that no region not fed by them can thrive.—Road Economics.



This is the type of Highway Bridge being constructed by the State Road Department.

One Per Cent Good Roads

The United States has 342,000 miles of "good" roads, according to the Federal Bureau of Public Roads, probably more than all the rest of the world put together.

We have heard a lot about the good roads in Italy and one or two other places in the world, and we've heard more about the famous good roads built by the Romans something like two thousand years ago.

But probably all together they wouldn't make a very extravagant showing alongside the 40,000 miles of good roads constructed in the United States last year.

The good roads in the United States—and this does not include city streets—are equal to something like 114 roads 3,000 miles long, clear across the continent at its widest point.

They would cover the country with a net-work of good roads every 40 miles north and south, and east and west.

But before we allow ourselves much of the feeling of satisfaction which some of these figures would seem to warrant, it would be well to remember that all our good roads put together are but a mighty small part of the total.

Probably most people will be surprised to know how small a percentage of the total of our roads have been made into "good" roads, in view of the surprisingly large mileage of construction that has been completed in the last two decades, since the automobile has come into general use.

The Federal Bureau of Public Roads gives the number of rural highways in the United States as 2,819,386.

Our 342,000 miles of good roads is therefore only a little more than one per cent—less than one and one-quarter per cent of the total.

And these good roads include all sorts—gravel, macadam, asphalt, concrete, brick and stone block, and all other kinds.

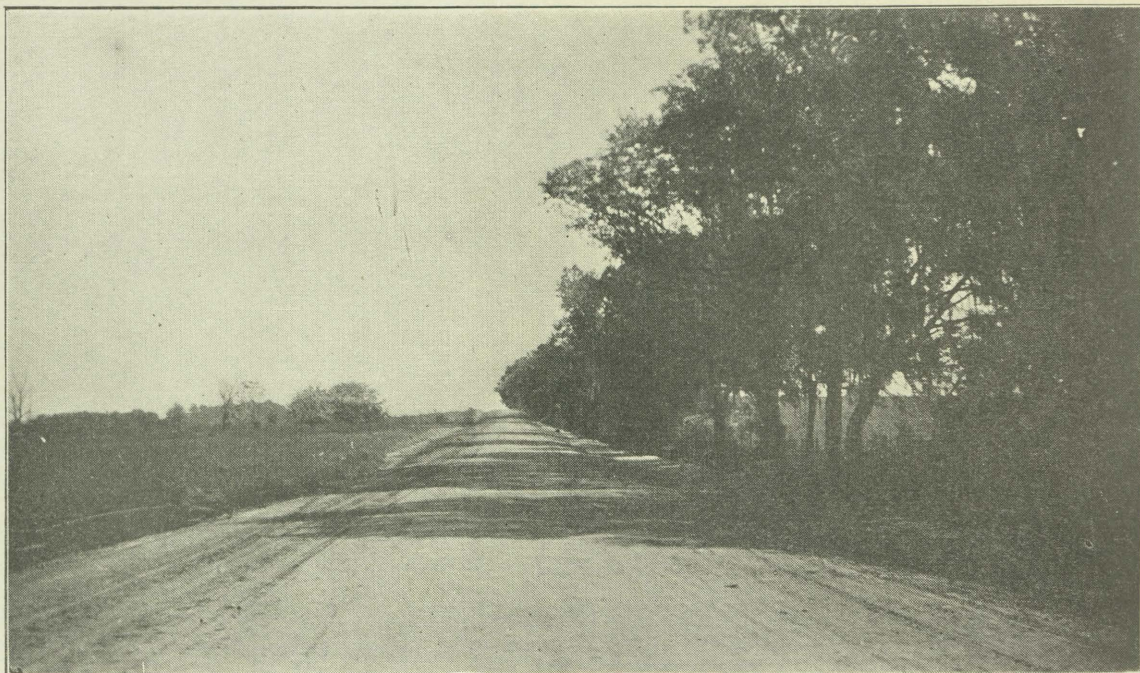
Of the total, 175,000 miles are ordinary gravel, 100,000 macadam, and only 27,000 miles are concrete. There are 30,000 miles of the various kinds of asphalt road, and 10,000 miles of other kinds of pavement.

Although it is going to be manifestly unnecessary to improve all these highways with concrete or asphalt, we can see that we have a long way to go before we will have done even moderately well in equipping the country with the sort of roads that modern conditions of travel demand.

All over the United States we have been doing big things in road building.

Especially has this been true with the 40,000 miles of good roads built last year, and the even greater mileage constructed and being constructed during the present year.

People may travel from one end of the nation to the other with speed and comfort hardly to be imagined a generation ago.



Another Stretch of Excellent Sand-Clay Construction.

A Gasoline Tax Is Fair

Roads must be built and maintained. That costs money. The money must be raised by some form of public license or taxation.

Years ago it was just and proper to raise all road funds by a general property tax—a tax on the farms and homes. In the days of horse-drawn vehicles the road was a neighborhood road, used almost solely by the neighbors and paid for by the neighbors by a general property tax.

Today with the automobile, the motor truck and bus, the road is not a neighborhood, or a town road, but a county, a city, a state, a national highway, used by everybody, from everywhere.

Under these changed conditions, with the general property tax at a prohibitive point, it is simply common sense and common fairness to say that the people who use the roads and get the most benefit from them, the motor vehicle owners, should pay a fair share of the cost.

You Pay As You Ride

If you could put a meter on every motor vehicle, which would show the mileage run, the ton mileage run, and the average speed, it would be an ideal plan to determine road use or benefits. You can't. The gasoline tax is the nearest approach to it; the use of gasoline is the meter or measure of road use

and road wearage—a car traveling a large mileage uses more gasoline than one traveling a small mileage; a big car more than a small one; high speed uses more than low speed. The public utility companies meter their service, gas and electricity; railroad companies charge so much per mile—the gasoline tax promises to meter road use.

The gasoline tax is not a burdensome one. It is paid in small amounts, twenty or thirty cents, when the gasoline tank is filled. The price of gasoline rises and falls every few days and we pay no attention to it.

No tax would be so easily and cheaply collected. All gasoline arriving in the State is inspected by a deputy oil inspector. A duplicate of the inspection slip would be sent to the Secretary of State and within two weeks the wholesaler would be required to remit his tax. It would not need a force of auditors or assessors—at most four clerks to handle the collection of over \$4,000,000, which a two cent a gallon tax would yield.

No Gas Tax Dodgers

The gasoline tax does not offer the opportunity for or invite evasion, to the same degree as the income, personal or real property tax. So far as the

(Continued on Page Twenty-One)

Road Crown

W. C. DAVIDSON, District Engineer.

A road should have just enough crown to provide lateral drainage for the surface of the roadway. It would seem that any crown over and above that amount is objectionable. Some reasons why a road should be built with modern crown are set out as follows:

1. To facilitate ease of driving.
2. To prevent the rapid run off of surface water and consequent shoulder wash;
3. To retain rainfall on the surface long enough to permit penetration for compaction purposes;
4. To reduce as much as possible the erosive action of high winds;
5. To aid in maintenance.

Most of us have observed from experience that a road of high crown is difficult to drive. The tendency is for the car to approach the shoulder lines where the section is more flat or for some other reason the driving is easier. The result is obvious. The shoulders become worn down still farther, the center remaining about the same, and the result is that an already excessive crown becomes the more exaggerated.

When a road is built with an excessive crown the transverse slope is so great that much damage is done to shoulder slopes by the quick discharge of water from the surface. There is but one way to correct this condition, and that is to flatten the crown so that the velocity of run-off is reduced.

Furthermore, by permitting the water to run from the road surface to the side ditches, we are losing the very ingredient that makes for the life of the road. The types that we build are mainly water-bound and it behooves us to conserve the moisture so necessary for compaction. An earth road that will puddle after rainfall, or a gravel road with that quality and quantity of binding material that it will rut slightly after rainfall, are easiest of maintenance. And it is found that such roads withstand drought conditions for much longer periods.

This further fact has been observed, that a road with a "peaky" crown is subject to a more destructive action from high winds. Such a road will generally be found swept as clean as a floor, whereas a road of flat section will retain a light mulch of loose material which is available for maintenance.

Finally, there is the problem of maintenance. Ask the patrolman which of the two types is easiest of maintenance. Then to satisfy yourself drive over a few miles of each and see for yourself which you find in the better condition.

The question may now arise—what might be termed a road of "flat" crown? The writer's observation, extending over a period of six years, leads to the conclusion that any slope of more than 3-8 inch to 1 foot from crown to shoulder is excessive in this country. And from this figure the revision, if any, should be down instead of upward.—New Mexico Highway Journal.

CLIMBING MOUNT ARARAT

It is reported that American capital is interested in transforming Mount Ararat into a pleasure resort. A railroad is to be built to its summit and shelter and entertainment for tourists are to be provided. Few mountains in the world are as familiar by name as Ararat, because of its Biblical associations, but most people's mental picture of it include the ark resting at the exact peak and its immensely varied population disembarking while the waters of the flood recede below.

Mount Ararat has long been the goal of mountain climbers and its sides have been attacked, with varying success, for generations. With an altitude of over 17,000 feet, its precipitous sides present difficult problems in climbing. The proposed railroad to the summit, while within the range of engineering possibilities, is an almost fantastic scheme. A legend persists that fragments of the ark still lie upon the ultimate summit of Ararat, but the few hardy climbers who have reached this goal discourage the belief. Noah, after descending the mountain with his ship's company, is supposed to have planted a

vineyard below the snow line, where he was afterward buried.

The summit was first reached by Professor Parrot in 1829 after two unsuccessful attempts. In 1850 another expedition carried a great cross to the summit, which was attained after unheard-of dangers and privation above the snow line. The cross was finally erected. On another occasion, after spending days and nights in the snows on precipitous cliffs, an explorer named Khodyke decided that the climbing was so difficult that the descent of the steep snow slopes "would have proved fatal to many of the animals of the ark."—Kentucky Road Builder.

HEALTH HINTS TO MOTORISTS

A lighting bug is about the only one that can get along with just a tail light.

TOO TRUE

Too many drivers, seeking to arrive on the opposite side of the railroad right-of-way, get only as far as up to and including.—Motor News.



A stretch of surface-treated Florida Lime Rock Base. This type of road has proven not only economical but very satisfactory.

The Road Man's Catechism

What is federal aid?

Federal aid consists of an annual appropriation of seventy-five million dollars that is appropriated by Congress to be apportioned among the various States of the Union in aid of road construction.

From what source is this money derived?

It is collected by the government in the form of a tax on automobiles and automobile accessories. Every time you buy a car, a casing, a tube, or any car accessory, you pay your bit toward creating the fund from which this seventy-five million comes.

How much federal aid does Oklahoma receive?

One million, seven hundred and fifty thousand dollars per year.

Does every county contribute to the federal aid fund?

Yes, if it has in it any citizen who uses an automobile or any automobile accessories.

Do all counties receive federal aid?

No! Only those who cooperate with the federal government through their State highway department.

Does the federal government extend aid direct to the counties?

No! The federal government deals only with the State as a unit and the counties are able to participate in this fund only by cooperation with their State highway department.

Can federal aid be used in maintenance?

No! Only in construction.

What per cent of federal aid is it possible to receive upon any given project?

The federal government may aid road projects in the State up to fifty per cent of the total thereof, provided that total cost does not exceed the sum of \$30,000.00 per mile. Where the State and county elect to build a road, the cost of which is in excess of \$30,000.00 per mile, federal aid may be obtained in the sum of \$15,000.00 per mile, and the total remaining cost must come from the county, the State or other sources.

Can federal aid be obtained upon anything except a hard surfaced road?

Yes! The federal authorities really prefer to start with you from the grass roots and help on both dirt work and drainage.

Can federal aid be obtained on all roads?

No! Only on such roads as have been designated as a part of the seven per cent federal aid system.

State Aid

What is state aid?

State aid at present consists of a fund derived from tax on gasoline and amounts to approximately two and one-quarter million dollars per year.

Is this state aid for construction of roads and bridges or is it for maintenance purposes?

Under the present law, not to exceed twenty-five per cent of it can be spent for maintenance and the remaining seventy-five per cent must be spent for construction.

Upon what roads can state aid be obtained?

While state aid is primarily intended for the State roads, the State Highway Commission may use it upon either township or county roads where an emergency exists and the best interests of the State would be served by such use.

What per cent of state aid can be obtained upon a road or bridge project?

In this respect state aid is different from federal aid. There is no statutory limitation upon the amount per mile nor is there any legal requirement that it must be met by a like sum. State aid is at the disposal of the State Highway Commission and may be used by the commission in any part of the State that in its judgment the expenditure of the money will best serve the interests of the State.

Do counties have to vote bonds to get state or federal aid?

They do not. Either state or federal aid can be offset by county, township, city, town, or even private funds.

Then why do county and township officials spend so much of their road funds single handed and not receive state or federal aid?

We pass. That is a question that has been frequently asked but never satisfactorily answered.—The Nation's Highways.

THE OLD ORDER CHANGETH

Rural communities are beginning to realize that routing through highways down Main Street brings many inconveniences as well as the dollars of tourists and some are casting a dubious eye on the once-sought-for main highway. Says the Palo Alto (Cal.) Times:

"There is satisfaction in knowing that the delegates at the highway conference held in Palo Alto Tuesday were unanimous in the opinion that the proposed Bayshore highway should not be routed through the city of Palo Alto, but should be kept as far east as possible. As the recommendations of this group are to be made to the committee of nine appointed by the governor, under authorization of the legislature, for the purpose of framing a highway policy with plans for its execution, we believe that we may safely count upon this point as to routing as being practically settled. The committee of nine has solicited the opinions of the localities affected by proposed highway systems, and therefore must be presumed to take them seriously when advanced.

The earlier plan of having the Bayshore highway connect with Middlefield road was highly objectionable. It would mean multiplied dangers to school children and others in a section where existing dangers from traffic are already too numerous. It would mean serious depreciation of property values for residences in the section affected. It would mean divid-

ing the city by a thoroughfare with traffic as incessant as that now seen on the peninsula highway.

Keeping the Bayshore road out of the city proper will not only mean the prevention of these disagreeable conditions in Palo Alto, but will be a benefit to motorists who use the road, as their speed would not have to be cut down to urban limits when outside the urban zone."—Western Highways Builders.

VALUE OF THE TRAFFIC CENSUS

If a system of highways is to be improved scientifically, a census of its traffic must be had. Otherwise there is a greatly increased chance that the improvement funds will not be spent most advantageously. In some quarters, however, there is a tendency to belittle the value of the census for this purpose, the thought apparently being that the necessity of improvements is obvious, and that even with the census, the requirements of the future cannot be foretold with certainty.

While these points are pertinent, neither fully covers the case. For instance, common knowledge of the existence of congestion at certain points is not applicable in the same way as is the detailed information obtainable by census as to the character of the traffic, its origins and destinations. A complete traffic census, be it observed, is not a mere count and general classification of vehicles, but requires in addition the obtaining of certain items of information from the drivers. Correct interpretation of such data may disclose that the work to be done is not obvious after all; that the development of some unopened or little-used route would be cheaper or of more benefit than would, say, the widening of an apparently established highway. As to accuracy of prediction, there is no greater uncertainty in this field than in many others where it is considered good practice to obtain all pertinent data before making final plans. Provision for the future is at least more likely to be right when based on data—even inadequate data—than when made purely by guess.

Traffic surveys are not expensive in proportion to the cost of the work to which they apply. The survey of Cook County, busiest and most congested in the State of Illionis, undertaken this year jointly by the county and the U. S. Bureau of Public Roads, was estimated at \$18,000. Final figures on the cost are not yet available. The undertaking of important work without adequate data is a leaf out of the old chapter of roads located and maintained according to the political strength of property owners.—Roads and Streets.

Moods and Tenses

I'd like to be a could-be
If I could not be an are,
For a could-be is a may-be
With a chance of touching par.
I'd rather be a has-been
Than a might-have-been by far,
For a might-have-been has never been,
But a has-been was an are.

—Cornell Widow.

ROAD TOLLS

Road taxes of a century ago were probably five times higher than now and roads were not so good. This statement is based on an article in New Hampshire Highways on early-day turnpikes built in that State more than a hundred years ago and as late as 1883 by private companies who took tolls from every user according to his vehicle and load.

“Pay-as-you-use” highways—the old toll roads were popular and for many years carried the bulk of vehicle traffic in the Eastern States. The turnpike as distinguished from other roads of the same period were those at which gates were placed at intervals to bar the progress of the traveler until a toll was paid which gave him the privilege of using the road. Only after \$600 or more had been spent on the road could any tolls be taken at the gates, and then the users paid the following rates among others:

Every ten sheep or hogs.....	1c a mile
Every ten cattle.....	2c a mile
Every horse and rider or led horse.....	1c a mile
Every sulky, chair or chaise with one horse and two wheels.....	1½c a mile
Every chariot, coach, stage, wagon or phaeton, with two horses, four wheels	3c a mile

For every carriage of pleasure, the like sum according to the number of wheels and horses on same.

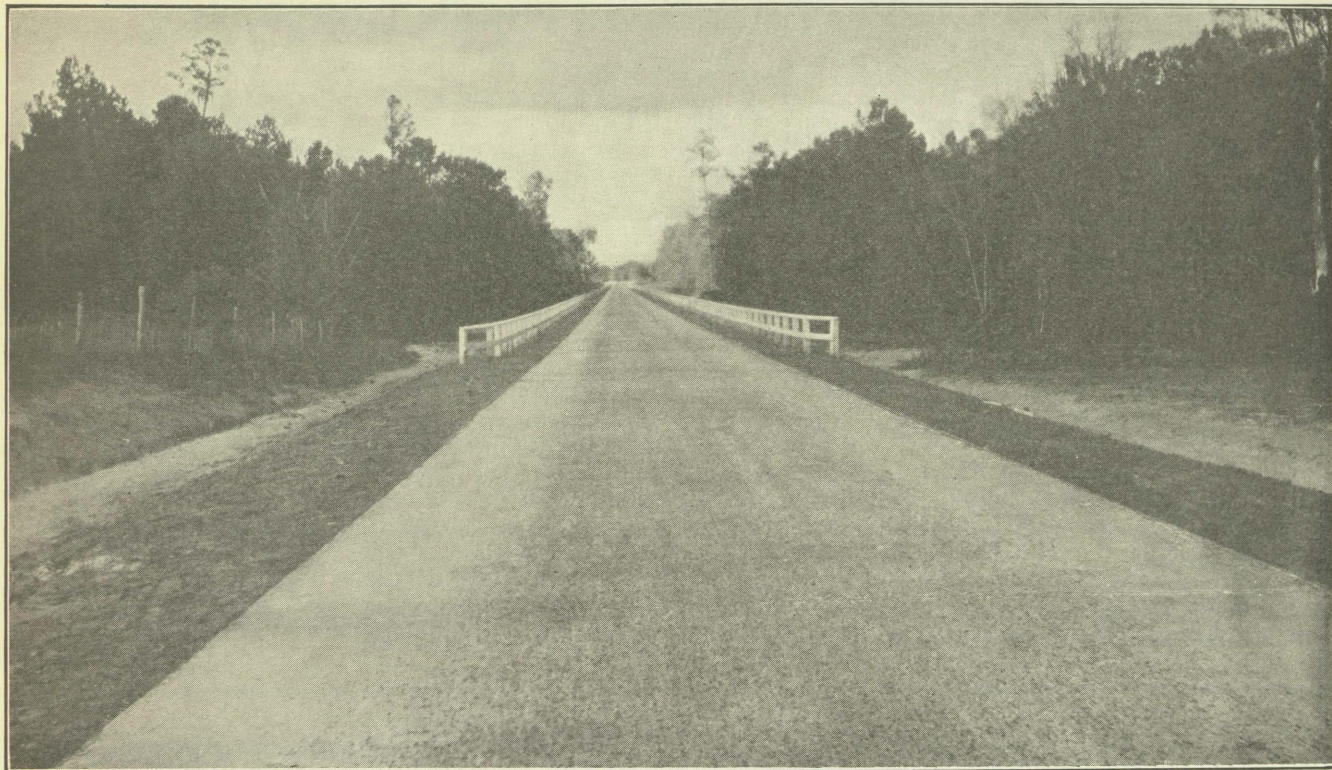
Applying the lowest toll rate of 1 cent a mile to one of our heavily-traveled routes, averaging 1,000 vehicles a day, it would mean \$10 a mile daily or \$2,500 for 250 days a year and on 150 miles the total would be \$325,000 annually. The cost of 150 miles graveled road would be \$167,550 a year and of pavement \$247,650 annually—including interest on the investment, depreciation and upkeep. So the “luxury” of a pavement would net the owners \$77,350 a year on such a road, besides affording the users a saving of nearly \$500,000 a year in running expense due to the better roads, plus the gain in comfort and convenience.

The reader may find it interesting to figure on his own estimates the tolls he would have had to pay under the old plan and his profits from the better road of today.—Texas Highway Bulletin.

“Yes, my friends,” said the theological lecturer, “some admire Moses, who instituted the old law; some, Paul, who spread the new. But after all, which character in the Bible has had the largest following?” As he paused, a voice from the back bench shouted: “Ananias!”—Columbia State.

Contracts Awarded by State Road Department from
January 1, 1924, to December 31, 1924

Contractor	Proj. No.	County	Length Miles	Length Feet	Contract Cost + 10%	Type
Bryson Const. Co.....	598-A	Jefferson	9.45		\$44,253.00	Sand-clay
Edgar Chapman	564-A	Charlotte.....	10.885		92,390.03	G. & D.
L. M. Gray.....	572	Bradford.....	7.00		96,765.59	Rock
L. M. Gray.....	607	Bradford.....	5.10		70,679.12	Rock
L. M. Gray.....	594	Bradford.....	9.10		117,132.35	Rock
Ed. Pettus	563	Osceola.....		315	12,062.60	Bridges
J. J. Johnston.....	562-A	Highlands.....		375	11,556.60	Bridges
Higgins Const. Co.....	36-A	St. Lucie.....		72	16,322.04	Conc. Bridge
Higgins Const. Co.....	620	St. Lucie.....		45	3,672.90	Timber Bridge
Boone & Wester.....	564-B	Charlotte.....		105	11,004.40	Timber Bridge
C. T. Dawkins	37-D	Alachua.....		60	31,552.40	Conc. Bridge
Ocala Lime Rock.....	575	Putnam.....	5.46		39,688.00	Rock
Boone & Wester.....	564-B	Charlotte.....	9.54		73,276.28	Marl Surf.
Sou. Pav. & Const. Co.....	44	Lake.....	10.529		395,611.38	Bit. Conc. Sur.
Barber-Fortin Co.....	625	Citrus.....	10.86		195,328.35	Rock
Barber-Fortin Co.....	626	Citrus.....	6.61		106,155.48	Rock
Sou. Pav. & Const. Co.....	622	Lake.....	.215		8,217.80	Bit. Conc. Sur.
W. J. Conners.....	582	Okeechobee.....		3,122	177,941.61	Conc. & Steel
Weeks & Jackson.....	562-A	Highlands.....	5.37		29,110.62	Bartow Clay
Mickler & McLeod.....	629	Highlands.....	6.00		40,270.23	Bartow Clay
Myers Const. Co.....	630	Highlands.....	11.00		120,109.44	Rock Base
Ed Pettus	534	Brevard.....		765	28,846.40	Timber Bridge
Ed Pettus	601	St. Johns.....		480	22,994.18	Timber Bridge
C. F. Lytle	636	St. Lucie	12.2		248,476.40	Rock Base
Waldeck & Deal.....	39-B	St. Lucie-Brevard	.25		45,567.05	Appro. Embk't.
Gillespie & North.....	545	Hernando.....		185	8,302.25	Ov'head Xing
W. P. McDonald Const. Co.	43	Marion.....	10.44		356,483.51	Sheet Asphalt
Ward-Latham Co.	43	Marion.....		120	18,903.50	Con. O'hd. Xg.
C. F. Lytle.....	26	Columbia.....	10.99		330,211.54	Plain Conc.
C. F. Lytle.....	608	Brevard.....	9.25		320,025.00	Plain Conc.
Broadbent Const. Co.....	564-A	Charlotte.....	10.88		181,538.07	Rock Base
Duval Engr. & Const. Co.	574	Madison.....	11.66		180,392.16	Rock Base
Broadbent Const. Co.....	576	Sarasota.....	5.68		109,055.10	Rock Base
C. F. Lytle.....	593	Manatee.....		3600	842,330.50	Conc. Brdg.
Morgan-Hill Paving Co...	588	Sarasota.....	2.34		69,796.97	Rock Base
Total.....			180.91	9244	\$4,456,022.85	



A section of 18-foot concrete highway. This photograph shows one type of guard-rail used on fills.

GASOLINE TAX AND REGISTRATION FEE QUARTER OF A CENT A MILE

Motorists of the country pay in the form of gasoline taxes and registration fees an average of only a quarter of a cent a mile, according to the Bureau of Public Roads of the United States Department of Agriculture.

That is what the fees paid in a year amount to when divided by 6,000, which is believed to be the average motorist's annual mileage. The average license fee per mile traveled is one-fifth of a cent and the gasoline taxes paid make up the difference of one-twenty-fifth of a cent.

The motorist or truck operator is assured of a good return from the taxes he pays, since the receipts are very largely devoted to road construction and maintenance. In 1923, 81 per cent. of the motor vehicle license revenues and 58 per cent. of the gasoline taxes were turned over to the State Highway Departments for expenditure under their supervision and a considerable portion of the remainder was expended by the counties for road purposes.

Consideration of the gasoline tax is of special interest to the motor vehicle operator. Thirty-five States now have this form of tax, the rate ranging from one to three cents with the exception of one State, which has a four-cent tax. A one-cent gasoline tax increases the cost of operating the average vehicle by less than a tenth of a cent per mile. On a trip from

Washington to Philadelphia the tax would amount to ten cents. The trip over the Lincoln Highway from New York to San Francisco would be taxed \$2.50. It is interesting to compare these rates with the toll charges which motorists formerly had to pay on toll roads. On six different turnpikes in Virginia and Maryland tolls amounting to \$5.05 were charged for a total of 187 miles, which is equivalent to 2.7 cents a mile. If a State attempted to charge this same rate for the use of the public highways by automobiles, it would have to establish a gasoline tax of 36 cents per gallon.—Michigan Roads and Pavements.

TARIFFS OF A TRAVELER

"One encounters many odd contrasts to American costs as one travels through the Continent," related a lady who recently returned from European travel. "But I can't help recalling especially an afternoon in Marseilles when I paid forty cents for a Saturday Evening Post and four cents for a bottle of excellent wine."—Columbus Dispatch.

This Is No Kid

At sixty miles
Drove Oscar Pidd,
He thought he wouldn't
Skid—but did!

—St. Paul Progress.

Cost of Roads Per Mile Gives Unfair Comparison

"The comparison of road costs per mile means very little to thinking people," says Director of Highways L. A. Boulay of Ohio, "and in many instances gives absolutely unfair results, unless width, labor, prices, length of haul and the topography of the country are taken into consideration at the same time."

It is not fair to compare the cost of grading per built that wide because traffic demands it, with the cost of a 16-ft. road. Material prices, haul and the cost per sq. yd. may be exactly the same, but the 20-ft. road will cost 25% more per mile, because there is 25% more road.

It is not fair to compare the cost of grading per mile in one section where the ground is flat and no drainage structures are required with the cost per mile of roads in the hilly counties, where grading must be heavy and the cost of bridging large.

Neither is it fair to compare the cost of roads per mile in one section where prices of labor are high,

with another section where labor prices are lower.

Nor is it fair to compare the cost per mile in one section where materials can be delivered on a siding along the road, with another section off the railroad where there may be a 15-mile haul.

All these things being facts immediately apparent to any sane person, it seems like a waste of time to argue about the cost per mile when the cost per sq. yd. is the thing to be considered. This is the way engineers would compare costs in order to get a true and fair comparison and can easily be understood by the average layman. Then if we want the cost per mile, let us figure the cost based on equal widths one mile long, and using the cost per sq. yd. to obtain these results.

When we speak of costs per mile, without taking into consideration width, labor costs, length of haul, etc., we are either deceiving ourselves or trying to deceive the public.—The Highway Engineer and Contractor.

THE LOST ROAD

A little straggling, crooked road,
With flowers by the way,
And here and there a quaint abode,
Ah, where is it today?
I used to jog along its edge
Avoiding ruts and deep
About me grew the wild-rose hedge
All nature fast asleep.
The cackle of a farmyard fowl
Sometimes would stir the air;
Mayhap a dog would bark or howl
To see me passing there.
A quiet, peaceful, sunny road
Where one could drive at will
And seldom meet a farmer's load,
It was so hushed and still.
Today I went that way again
And lo! a paved highway;
A thoroughfare where many men
And cars noised all the day;
And everywhere along the road
New houses met my sight,
While each old-fashioned wood abode
Was sprucely painted white.
And at its edge were many booths
Of fruits and flowers gay,
Where city folk oft stopped to choose
Their wares, then drove away.
A little straggling, crooked road
A road I once held dear;
A country highway a-la-mode—
My road of yester-year!

—Maude Wood Henry.

European borrowers owe a debt of gratitude to C. Columbus.—National Newspaper Service.

STATE EXPANDS TRAFFIC CONTROL

(From Michigan Roads and Pavements.)

A state-wide system of traffic regulation, made necessary by the constantly increasing automobile traffic and the greater mileage of paved highways, is being worked out by the state department of Public Safety.

Flying squadrons of state police were recently detailed to patrol the main traveled highways. In the more isolated sections of the state new effort was made to maintain a constant patrol. The plan adopted was to send the squadrons out with their destination a secret. Thus they would appear unexpectedly on this or that highway and operate for a day. It is believed that the uncertainty of where the mounted police may be will curb speeding and recklessness.

To permit of further expansion of the system, state police are constantly being drilled in the use and care of motorcycles. According to Commissioner Harry H. Jackson, the adoption of a paving program by the state and the growing favor Michigan is finding in the eyes of tourists are aggravating factors in the traffic situation. It would take an almost unlimited number of men to keep constant watch of the trunk line roads. The state is not equipped for such a task and the problem confronting the safety department is to dispose its forces where they will do the most good.

The Simple Answer

First Member of Cavalry Detachment—"Looker heah, Joe, how come yau-all to teach dat der mule all dem tricks? Ah can't teach mah mule nthing!"

Second Ditto—"Dat's easy; you-all jes' has to know moh dan de mule."—The Pointer.

EVOLUTION IN TRANSPORTATION

"Not long ago I walked to my office, my dog, prancing at my side, dropped a bone he was carrying to bark at two foreigners trudging along the road. One was an old woman, quaintly dressed, carrying a pack on her back. The other, apparently her husband, was an organ grinder with a monkey whose supple hands held a tin cup for the pennies. They moved to one side to let the grocery boy, chirruping at his horse, rattle past in his cart. A moment later the delivery cart gave way to a huge motor truck, laden with produce from the country, which bore down on it with a warning snort.

"There in the space of five minutes, had passed the evolution of centuries of the carrier trade, from that which existed as far back as history is known, to the latest device created by man."—Norton: "The Motor Truck."

A black-skinned pipe shop man went into a bank to get a check cashed. He had to stand in line quite a while, and finally just as he got to the paying window, the teller hung up a sign, "The Bank is Busted."

Sambo—"Whut yo all mean, boss—the bank am busted?"

Teller—"Just busted, that's all. Didn't you ever hear of a bank being busted?"

Sambo—"Yessah, boss, yassah. But ah never had one ter bust right in mah face!"—Pipe Progress.

Successful Methods

A Moderate Proposition.—(From Road Economics.)—How small a part of the bonded debt of the United States is for highway service is shown in a report made by Henry R. Trumbower, economist, U. S. Bureau Public Roads.

This report shows that of the total bonds issued by States, counties and local political subdivisions only 14 per cent of the amount is for highway bonds.

Further, that of the total public debt of States, counties, local political subdivisions and the National Government less than 4 per cent is in highway bonds.

We have a big highway service program but this is a big country.

Stork Must Be a Scofflaw

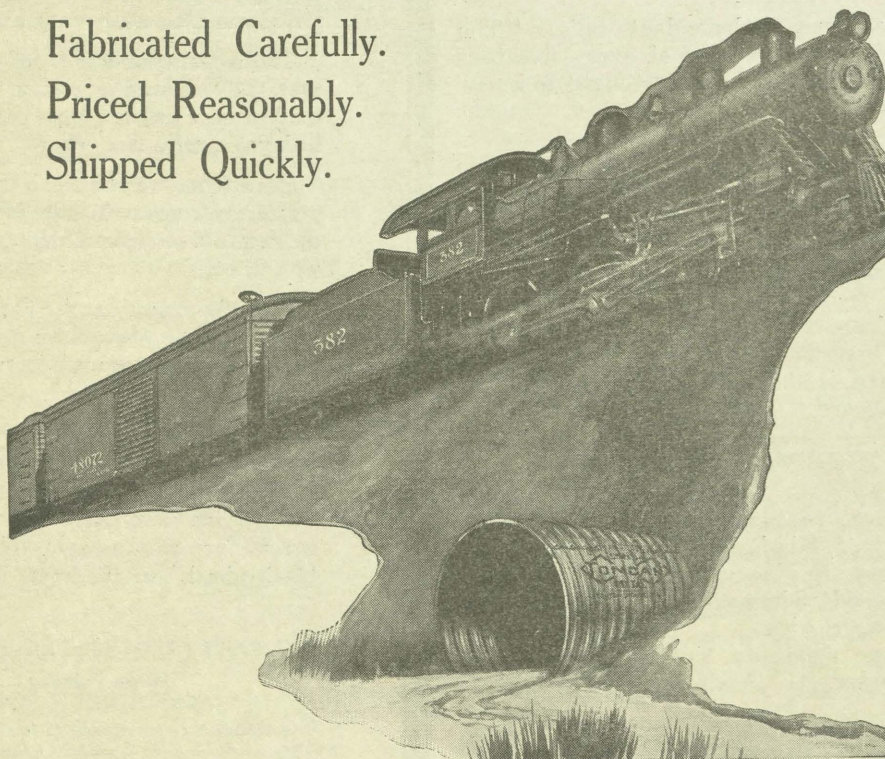
Anyway, according to the birth column in the Los Angeles Times, he has just left Mr. and Mrs. Jacob Lieker of that city, a little Lieker.—Cincinnati Enquirer.

There seems to be one law for the rich and one for the poor, and about two million for the middle class.—Memphis News-Scimitar.

One thing wrong with our homes is too many couples think a pair beats a full house.—Columbia Record.



Fabricated Carefully.
Priced Reasonably.
Shipped Quickly.



THE BERGER MANUFACTURING CO.
Formerly THE FLORIDA METAL PRODUCTS CO.
JACKSONVILLE, FLA.

Not Loud Enough

"Jack's got a new siren for his car."

"Really! What became of the blond one?"—London Mail.

A congressman once declared in an address to the house:

"As Daniel Webster says in his great dictionary—"

"It was Noah who wrote the dictionary," whispered a colleague, who sat close by.

"Noah, nothing," replied the speaker. "Noah built the ark."

In a Western city, there is a sign reading as follows:

4,076 died from effects of gas—

39 inhaled it.

37 put a lighted match to it.

4,000 stepped on it.

NOT BIDDING

"Any part of the city for fifty cents!" yelled the taxi driver.

"You can't sting me again," retorted Silas. "I bought the city hall last year, and they wouldn't give it to me."

The way it wobbles back and forth is just one more reason for believing that the waist-line is the line of least resistance.—Philadelphia North American.

Mr. Ford's Learborn Independent says: "The United States consumes three out of every five tons of the world's output of tin." Henry ought to know.—Columbia Record.

Eating of the tree of knowledge constrained Eve to put on clothes, but it is different with her daughters.—Columbia Record.

A cross-word puzzle is one of those things in the home that lead from one word to another.—Philadelphia North American.

The closer a man is the more distant his friends are.—Columbia Record.

AMONG HIGHWAY ENGINEERS

Mr. H. S. Gove, formerly of the Tallahatchie Drainage District of Mississippi, has accepted the position of County Engineer for Glades County, Florida. He succeeds Thomas Frederick, who has moved to Sarasota, Florida.

Mr. Gove at one time was assistant engineer of Glades County under Mr. Frederick.

Mr. R. P. Ransom has resigned from the position of County Engineer of Lee County, Florida, to enter the real estate field in Ft. Myers.

Mr. E. W. Stanley, assistant engineer under Mr. Ransom, has been appointed County Engineer and will be in charge of the construction of Lee County roads under their \$1,250,000 bond issue.—The Highway Magazine.

*Permanent
roads are a
good investment
—not an expense*

The High Cost of Postponing Permanent Highway Building

Poor motor roads stifle industry and agriculture, waste huge sums annually in high maintenance costs, and greatly increase gasoline, tire and repair bills.

There is not a state, not a county, not a community, that isn't paying a heavy price for having too few permanent roads.

There are still many sections of the country—even whole states—that are trying to operate twentieth century traffic over nineteenth century roads.

This is costing millions of dollars every year, and will keep on costing millions until we have well developed permanent highway systems everywhere.

Even what we often call the more progressive communities are far behind the demands of modern highway traffic with its 16,000,000 motor vehicles.

From the Atlantic to the Pacific, and from Canada to Mexico, we need more Concrete roads—the roads for twentieth century traffic.

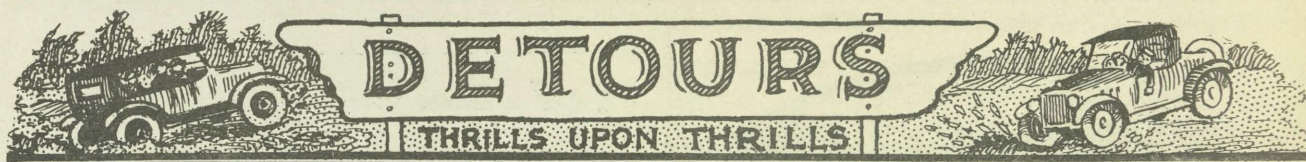
Your highway officials want to be of the greatest possible service to you. Get behind them with ways and means that will provide more Concrete roads and streets. Such an investment will pay you big dividends year after year.

PORTLAND CEMENT ASSOCIATION

Graham Building
JACKSONVILLE, FLA.

*A National Organization to Improve and
Extend the Uses of Concrete*

OFFICES IN 29 CITIES



Latest Alibi

"What excuse had you for driving sixty miles an hour through the city?" demanded the Judge sternly.

"I was just hustling to get home so I could get back to the cross-word puzzle I have been working on," explained the motorist.

"Case dismissed. Come back into my consultation room; I want to ask you about a couple of words that have stumped me," said the Judge.—Cincinnati Enquirer.

In these athletic days, the three R's seem to be Root, Root, Root.—Anderson (Ind.) Herald.

This will go down in automobile history, we suppose, as the Elizabethan Age.—Columbia Record.

Improve Your Child

Edison, with all his inventions, was a piker compared to the ambitious young photographer who advertised: "Your baby, if you have one, can be enlarged, tinted, and framed for \$8.79."—Jack o' Lantern.

The Higher Education

In Russia, a class for instructing people in the art of hurling bombs has been discovered by the police. Just a finishing school, of course.—The Humorist (London).

Plugged

Fred (horseback riding)—"Hey, you! Don't stop your car in front of my horse."

Paul—"Don't worry, I know the rules. Don't park in front of a plug."—The Dry Goods Economist.

Not So Sweet

The Lady—"Is Sir Reginald Wotname staying here?"

Hotel Clerk—"Yes, first floor, suite one."

The Lady—"Sir!"—London Opinion.

Among the differences between the sexes which persist in spite of everything are suspenders and giggles.—Columbus Ohio State Journal.

Epicedium

The Cries of London have been set to music. The tremolo swan-song of the flustered pedestrian is said to be particularly effective.—London Opinion.

GOING, GOING, GONE!

The "depressor" on an automobile is the exhilarator that accelerates the fool driver into Kingdom Come.—Hill Herald, St. Paul.

All for It

Ascum—"I see there's some talk of having the people vote at the next State election upon the question of abolishing capital punishment. Would you vote to abolish it?"

Fogie—"No, sir; capital punishment was good enough for my ancestors, and it's good enough for me."—Washington Star.

Hastening the Finish

The advantage of tetraethyl will be that it is more direct and quick in results. Without its use one has to wait till the gasoline has been run through the motor and the car gets onto a railroad crossing.—Cherokee Chief.

Cautious Kitty

Emulate the cat. The cat has nine lives and yet takes no chances.—Louisville Courier-Journal.

THOSE FLIVVER HOBOS

Sign on the back of a wrecked Ford:

"No Mother to
Guide her."

On another Ford:

"The Tin You Love
to Touch."

On another:

"Hell to start,
Hell to stop,
Four wheels—
No brakes!"

THE WORLD DO MOVE

A small American automobile recently did in four hours what it required the Israelites forty years to accomplish in their exodus from Egypt to Palestine. This was crossing the Siani Desert, the wild and barren region between the Gulf of Suez and the Gulf of Akabah, a distance of about 130 miles.—Associated Press.

FIVE TRAGEDIES

A man struck a match to see if the gasoline tank in his automobile was empty. It wasn't.

A man patted a strange bulldog on the head to see if it was affectionate. It wasn't.

A man speeded up to see if he could beat the train to the crossing. He couldn't.

A man touched a trolley wire to see if it was charged. It was.

A man cut out his advertising to see if he could save money. He didn't.

"I keep six honest serving men,

They taught me all I knew,

Their names are What, and Why, and When,

And How, and Where, and Who."

—Kipling.

THE MOST MILEAGE FOR THE MONEY

(Continued from Page Eight)

fited. Super-roads have their place, but are only justified by unusual traffic demands.

Let every broadminded road building policy be governed by the sound principle of apportioning funds so as to provide the maximum number of people with adequate road service.—Road Economics.

ONE PER CENT GOOD ROADS

(Continued from Page Eleven)

But the time has not come yet, and will not come for a good while yet, to let up on this job of road building, with some 2,477,386 odd miles of rural highways yet in the plain dirt stage, and much of them impassable for considerable portions of every year.—Port Huron (Mich.) Times-Herald.

With the completion of the construction work maintenance begins, and upon the efficiency of the system of maintenance of the roads of the state depends in a very large measure the success or failure of a state's road program.—Ex.

Novelty

He—"I have an idea."

She—"Be good to it. It's in a strange place."

—Burr.



**for
Better
Roads**

**Most big road
jobs are Basic
Slag jobs**

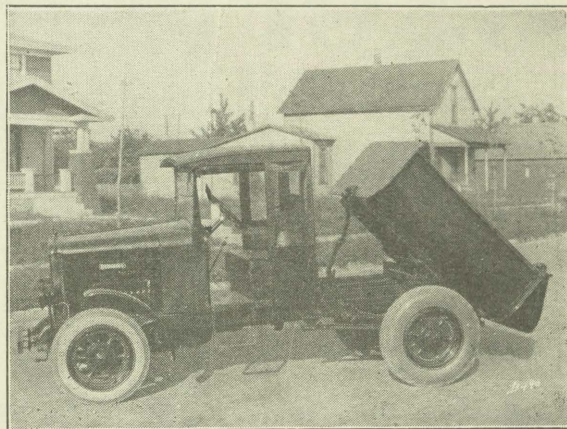
The road builder's first concern is to choose a road metal that will meet rigid Federal Aid specifications.

And, second, he places his orders with a firm that can give him uniform quality, adequate quantity and "on time" deliveries. Our best bid for your business is that we consistently qualify on all four points.

Birmingham Slag Co.
Slag Headquarters for the South

Atlanta
Thomasville
BIRMINGHAM
Montgomery
Orlando



Let's Get Together On This Thing

Horses, mules, wagons, tractors and other light trucks have been backed on the side to give this **Indiana Road Builders Special** opportunity to deliver its maximum ability. The results have been the elimination of such costly methods of hauling and the adoption of this truck in fleets.

Its sturdy construction permits high speed and rough usage year after year and the depreciation of the paver or mixer is no greater than on this job.

The cost of operation is so reduced over other trucks, that owners have come to realize a degree of satisfaction in its operation heretofore unheard of.

See this truck at the Good Roads Show in Chicago.

Indiana Truck Corporation
Marion, Indiana

Status of Road Construction

THROUGH OCTOBER 31ST, 1924

Project No.	Contractor.	Road No.	County	Total Length Miles	Clearing Miles	Grading Miles	Base Miles	Surface Miles	Type	Per Cent Complete
34	Union Indemnity Co.....	7	Escambia	10.00	10.00	10.00	....	10.00	C.	100.00
36-A	H. L. Clark & Sons.....	4	St. Lucie	7.76	7.76	7.76	7.76	7.76	B.M.	100.00
36-B	C. F. Lytle.....	4	St. Lucie	7.12	7.12	7.05	....	7.12	C.	98.00
37-A	F. W. Long & Co.....	2	Alachua .....	.70	.70	.70	.70	.70	S.A.	99.60
37-C	F. W. Long & Co.....	2	Alachua	3.26	3.26	3.26	3.26	1.43	S.A.	75.50
37-D	Fla. Drainage & Const. Co..	2	Alachua	2.14	0.00	.59	....	....	G.	30.00
37-E	Wm. P. McDonald Const. Co.	2	Alachua	7.96	7.64	7.88	7.92	7.92	S.A.	99.00
40-A	C. F. Lytle.....	4	Brevard	16.17	15.36	8.00	1.92	....	R.	28.00
40-D	J. Y. Wilson.....	4	Brevard	6.72	6.38	4.36	0.00	....	R.	16.00
40-E	Langston Const. Co.....	4	Brevard	13.60	13.05	12.24	6.80	....	R.	60.00
43	Wm. P. McDonald Const. Co.	2	Marion	10.44	8.00	1.56	0.00	0.00	S.A.	7.35
44	Southern Paving Const. Co.	2	Lake	10.53	10.53	6.10	4.63	0.00	B.M.	27.44
503	State Forces	2	Charlotte	20.18	20.18	20.18	....	19.77	S.C.	99.00
505	State Forces	2	Columbia	11.80	11.80	11.80	11.80	11.80	R.(S.T.)	100.00
521	Morgan-Hill Paving Co.....	4	Nassau	12.41	12.00	11.78	5.08	....	R.	62.10
523	M. J. Cole (Co. funds).....	8	Okeechobee	8.25	8.25	8.25	8.25	7.00	R.(S.T.)	99.00
534-A	J. D. Donahoo & Sons.....	24	Brevard	2.65	2.65	2.09	0.00	....	R.	77.00
534-B	Noll & Noll.....	24	Brevard	11.85	11.85	11.85	7.23	....	R.	61.00
539	County Forces	5	Marion	11.30	11.30	11.30	11.30	11.30	R.(S.T.)	100.00
544-B	The Barber-Fortin Co.....	5	Pasco	11.33	11.33	11.33	10.76	....	R.	95.00
545	Broadbent & Groeting.....	5	Hernando	9.51	9.51	9.51	9.51	8.27	S.A.	94.00
553	State Forces	2	Marion	9.15	9.15	9.15	9.15	9.15	B.M.	100.00
560	State Forces	6	Calhoun	20.00	20.00	19.20	....	18.00	S.C.	96.00
562-A	Weeks & Jackson.....	8	Highlands	5.37	....	....	....	4.83	S.C.	90.00
564-A	Edgar Chapman (Co. funds)	5	Charlotte	10.88	6.51	4.78	....	....	G.	32.00
564-A	Broadbent & Groeting.....	5	Charlotte	10.88	....	....	0.00	....	R.	0.00
564-B	Boone & Wester.....	5	Charlotte	9.86	9.86	9.86	....	.39	S.C.	78.00
565	State Forces	1	Madison	15.66	15.66	15.66	....	15.66	S.C.	100.00
567	State Forces	1	Walton	21.35	13.87	3.41	....	2.37	S.C.	22.00
571	Hunter & Gladwell.....	1	Madison	14.73	13.80	11.04	....	4.12	S.C.	74.00
574	State Forces	9	Madison	11.66	11.66	11.66	....	....	G.	100.00
574	Duval Engr. & Const. Co...	9	Madison	11.66	....	....	0.00	....	R.	0.00
575	State Forces	3	Putnam	5.46	5.29	5.18	5.02	.87	R.(S.T.)	82.15
576	S. T. Buchanan & Sons.....	5	Sarasota	5.68	5.68	4.82	....	....	G.	68.00
576	Broadbent Construction Co.	5	Sarasota	5.68	....	....	0.00	....	R.	0.00
579	State Forces	1	Holmes	8.62	8.62	8.62	....	8.62	S.C.	100.00
586	State Forces	1	Jackson-Wash'ton	17.37	7.99	6.25	....	4.34	S.C.	54.00
597	J. Y. Wilson.....	4	Volusia	16.29	13.84	8.95	0.00	....	R.	17.00
598-A	W. J. Bryson Paving Co....	1	Jefferson	9.45	9.08	8.79	....	.37	S.C.	92.00
598-B	State Forces	1	Jefferson	7.80	7.41	4.83	....	3.90	S.C.	63.00
599	M. M. Boyd.....	2	DeSoto-Charlotte.	7.40	7.40	7.25	....	3.33	S.C.	79.00
604	C. F. Lytle.....	4	Volusia	7.72	3.32	.61	0.00	....	R.	17.00
607	L. M. Gray.....	13	Bradford	5.10	5.10	5.10	5.10	....	R.	100.00
607-B	State Forces	13	Clay	6.00	5.10	3.30	0.00	....	R.	11.00
608	State Forces	4	Brevard	9.25	7.20	5.18	....	....	G.	56.00
608	C. F. Lytle.....	4	Brevard	9.25	....	....	0.00	....	R.	0.00
612	State Forces	1	Leon	17.58	8.79	3.60	....	0.00	S.C.	16.00
622	Southern Paving Const. Co.	2	Lake .....	.215	.21	.21	.10	.10	B.M.	85.00
625	The Barber-Fortin Co.....	5	Citrus	10.86	5.64	1.62	0.00	....	R.	5.80
626	The Barber-Fortin Co.....	5	Citrus	6.61	4.49	3.76	0.00	....	R.	15.94
628-D	State Forces	3	Volusia	6.47	3.75	1.03	0.00	....	R.	5.00
629	Mickler-McLeod	8	Highlands	6.00	....	....	....	3.15	S.C.	54.00
630	Myers Construction Co.....	8	Highlands	11.00	....	....	....	0.00	R.	0.00
634	State Forces	1	Jackson	11.07	2.76	1.77	....	0.00	S.C.	16.06
636	C. F. Lytle	8	St. Lucie	12.20	0.00	0.00	0.00	....	R.	0.00

TOTAL MILES COMPLETE

	Clearing Miles.	Grading Miles.	Base Miles	Surface Miles.
Complete September 30, 1924.....	1,142.17	1,074.27	391.69	683.71
Complete October 31, 1924.....	30.77	24.35	12.63	28.06
Total October 31, 1924.....	1,172.94	1,098.62	404.32	711.77

	Concrete.	Brick.	S. Asphalt	Bit. Macadam	S. T. and Rock	Sand Clay	G. & D.	Total
Complete September 30, 1924.....	86.73	25.15	78.10	141.04	156.84	357.81	204.62	1,058.62
Complete October 31, 1924.....	.05	0.00	2.49	4.88	15.92	8.98	1.75	34.07
Total October 31, 1924.....	86.78	25.15	80.59	145.92	172.76	366.79	206.37	1,092.69

Note—The above tabulation shows only those projects that are actually under construction at the present time and does not show projects that have been previously completed. However, the table, "Total miles completed," at the foot includes all projects that have been completed prior to October 31, 1924, and the amount completed in October also. The abbreviations used are as follows:

C.—Concrete. S.A.—Sheet asphalt. B.M.—Bituminous macadam. R.—Rock base. S.C.—Sand clay. G. & D.—Graded and drained. S.T.—Surfaced treated.

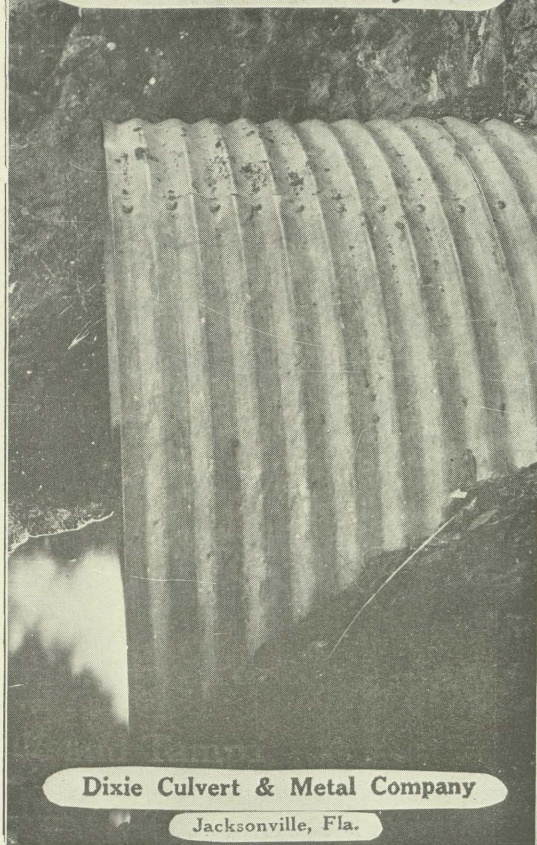
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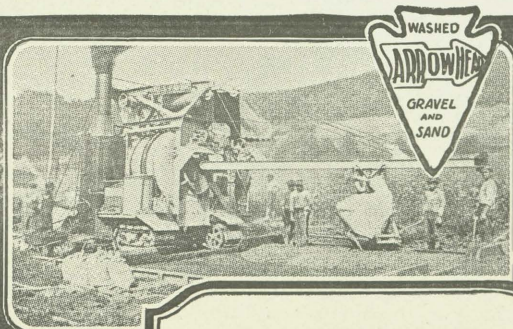
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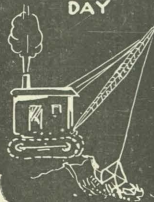
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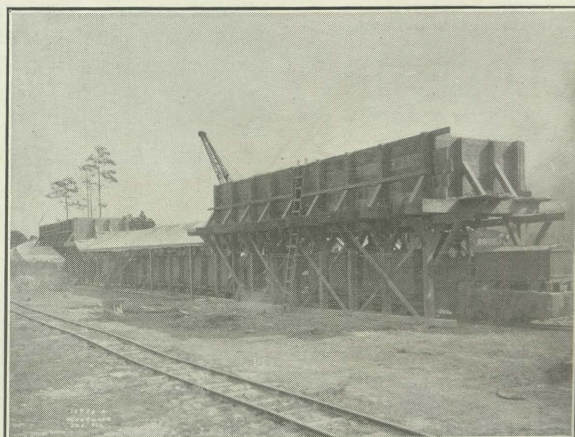
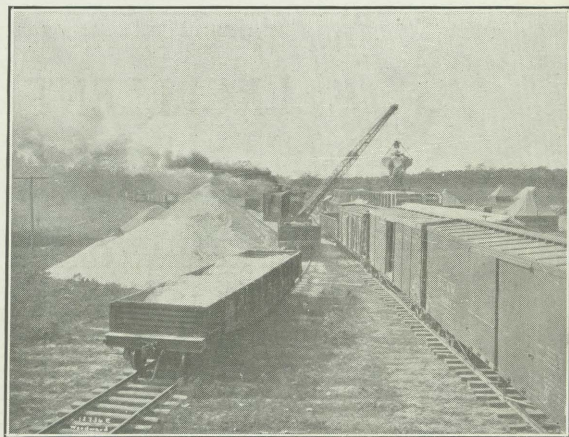
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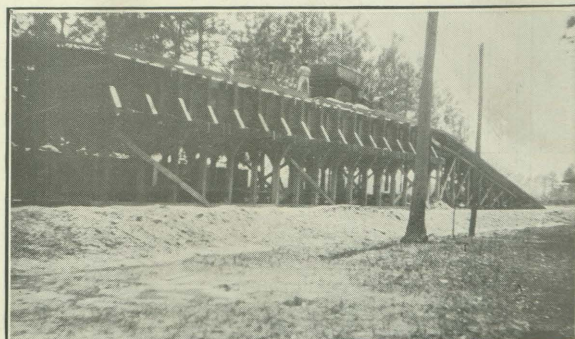
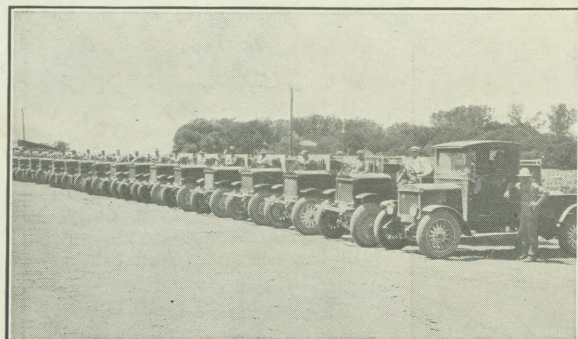
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